Clark County, Washington
2001 National Pollutant Discharge Elimination System (NPDES) Annual Report

Submitted in compliance with National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge Permit No. WA-004211-1

June 30, 2002

Clark County Public Works Department
Vancouver, Washington

TABLE OF CONTENTS

STATEMENT OF CERTIFICATION

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature: _____

County Administrator

INTRODUCTION

Clark County's National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit includes a requirement for an annual report to verify compliance with the primary permit requirements for performing the tasks of the stormwater management program.

This document is the annual report for the reporting period of January 1, 2001 to December 31, 2001. It is the third annual report under Clark County's permit. The Washington Department of Ecology (Ecology) extended Clark County's permit coverage from its expiration date of December 31, 2000 to whenever the next permit is issued. The county filed a notice of intent to receive permit coverage as a part of the June 2000 annual report.

PERMIT REQUIREMENTS

Permit compliance reporting is made complex by overlapping permit requirements, multiple departments performing parts of permit components, and the reality that specific permit components are parts of larger county work programs. The following section quotes the permit requirement for an annual report.

S8. Stormwater Management Program Annual Report Requirements

A. *The permittee shall submit an annual report by July 1, 2000 and annually thereafter. Any information in the report readily distinguished by water quality management areas should be presented as such.*

B. *The report shall include the following sections:*

1. *Status of implementing the components of the approved Stormwater Management Program (SWMP), including the status of compliance with the approved implementation schedule described in Special Condition S9, and a description and rationale of any program modifications made, other than those submitted for approval under Special Condition S5.A;*

2. *Notification of any recent or proposed annexations or incorporations resulting in an increase or decrease in permit coverage area, and implications for the SWMP;*

3. *Differences between planned and actual expenditures with a breakdown for the components of the SWMP and the budget since permit issuance. The report shall reflect numeric expenditures for the components of the SWMP;*

4. *Revisions, if necessary, to the fiscal analysis reported in the SWMP;*

5. *A summary and analysis of the cumulative monitoring data collected throughout the term of the permit;*

a. *If the permittee monitors any pollutant more frequently than required by the SWMP, then the results of this monitoring shall be included in the report.*

b. *If the permittee conducts any other stormwater monitoring in addition to that required in the SWMP, then it shall provide a description of the additional monitoring in the report.*

6. *A summary describing compliance activities, including the nature and number of official enforcement actions, inspections, and types of public education activities;*

7. *Identification of known water quality improvements or degradation; and*

8. *The status of watershed-wide coordination and activities which the permittee has undertaken individually or jointly. The report shall include proposed management measures to enhance regional coordination and/or address regional stormwater problems that will be implemented during the term of the next permit.*

1. STATUS OF PERMIT COMPONENTS

The numbered sections of this report correspond with the numbered permit requirements described in the National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge Permit No. WA-004211-1 permit, with the exception that requirements S8.B.1 (status of permit components), S8.B.5 (summary of monitoring results), and S8.B.6. (summary of compliance measures) are combined to simplify presentation. The permit-defined stormwater management program components are listed, followed by a description of the status of compliance, including a section for activities scheduled under Condition S9.

The stormwater water management program, submitted to Ecology in 1998 as the permit application, included permit-mandated activities and several water resource and habitat protection and enhancement activities not specifically required by the permit. This report focuses on stormwater management program activities that meet NPDES permit requirements, largely excluding activities that do not meet permit requirements.

S5.B.1. Comprehensive Planning Process

Permit Requirement

A description of a comprehensive planning process used to develop the stormwater management program including public participation, intergovernmental coordination, and the relationship to other planning processes.

Summary of Compliance Activities

This requirement was performed for the 1999 NPDES stormwater management program submitted for the current permit. The Washington State Department of Ecology extended the Clark County stormwater management program past the December 31, 2000 permit expiration date. When Ecology issues a new permit, the county will be required to revise its stormwater management program.

Ongoing activities of the Clean Water Commission, appointed by the Clark County Board of County Commissioners to advise them on issues related to stormwater fee expenditures, are also included in this component.

S5.B.2. Management Needs and Priorities

Permit Requirement

An analysis of stormwater management needs, a system for prioritizing needs, a description of the basis for the priority system, and an implementation plan and schedule for the term of the permit that reflect the priority needs. The stormwater management program must have an appropriate balance between prevention and correction based upon available information about sources of pollution and discharges from municipal separate storm sewers owned or operated by the permittee.

Summary of Compliance Activities

This requirement was performed for the 1999 NPDES stormwater management program submitted for the current permit. The stormwater management program implements the highest priority activities. The next permit will likely cause a new needs assessment following the method prescribed by the permit under direction of the Clark County Board of County Commissioners and Clean Water Commission.

S5.B.3. Legal Authority

Permit Requirement

Adequate legal authority to control discharges to and from municipal separate storm sewers owned or operated by the permittee. This legal authority, which may be a combination of statute, ordinance, permit, contract, order, or inter-jurisdictional agreements with other permittees which have existing legal authority, shall include the ability to:

1. *Control the contribution of pollutants to municipal separate storm sewers owned and operated by the permittee from stormwater discharges associated with industrial activity, and control the quality of stormwater discharged from sites of industrial activity;*
2. *Prohibit illicit discharges to the municipal separate storm sewer owned or operated by the permittee;*

3. *Control the discharge of spills and the dumping or disposal of materials other than stormwater into the municipal separate storm sewers owned or operated by the permittee;*
4. *Control through interagency agreements or inter-jurisdictional agreements among permittees, the contribution of pollutants from one municipal separate storm sewer to another;*
5. *Require compliance with the conditions in ordinances, permits contracts or orders; and*
6. *Within the limitations of state law, carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance with local ordinances.*

Summary of Compliance Activities

Within the limits of powers granted by state and federal government, Clark County maintained adequate legal authority to control pollutant discharges and to enter into agreements with other permittees. This authority was in place before the reporting period.

S5.B.4. Monitoring Program

Permit Requirement

A program to monitor the effectiveness of the stormwater management program in reducing pollutants discharged and reducing impacts to surface waters, ground waters, and sediments. The monitoring program, based upon the priorities identified in Special Condition S5.B.2. and specific actions required in Special Condition S9.C., shall address field evaluation, sampling, and analysis to:

1. *Estimate concentrations and loads from representative areas or basins to be used in evaluating overall program effectiveness;*
2. *Evaluate the effectiveness of selected Best Management Practices (BMPs);*
3. *Identify specific sources of pollution; and,*
4. *Identify the degree to which stormwater discharges are impacting selected receiving waters and sediments.*

The monitoring program shall include a quality assurance/quality control plan.

Summary of Compliance Activities and Summary Cumulative Data

During the permit-reporting period, the monitoring program continued or completed current monitoring projects and conducted activities scheduled under Condition S9.C.

Stream Gauges

Stream gauges provide a means to measure stream flow continuously. This information is used to analyze drainage basins for various purposes and develop computerized models needed for designing new stormwater facilities and predicting stream flow for proposed development conditions. Public Works operated four continuous stream gauges that digitally record hourly readings. Two are on Salmon Creek and two are on Lacamas

Creek. Data is compiled and archived quarterly. Gauge stations were added on China Ditch and Matney Creek subwatersheds of Lacamas Creek in late 2001.

Rain Gauges

Rain gauges provide a continuous record of rainfall. This information is used to analyze drainage basins for various purposes and develop computerized models needed for designing new stormwater facilities. Public Works continued to operate four rainfall recorders, one in upper Burnt Bridge Creek Basin, one in Lacamas Creek Basin, and two in Salmon Creek Basin. The stations record hourly totals on digital loggers. Data is compiled and archived quarterly. In addition, the county's Salmon Creek Treatment Plant operates a daily read rain gauge.

Lacamas Lake Loading

The stormwater water management program operates a continuous sampling station on lower Lacamas Creek. The station was constructed by the Lacamas Lake Restoration Grant Project to estimate nutrient loading to Lacamas Lake and track changes with time. Rainfall, stream stage, conductivity, and temperature are recorded hourly. An automatic sampler collects storm flow samples which are analyzed for total phosphorus and total suspended solids to calculate loading. The third year of operation began in October 2001. Weekly samples at the lake inlet and outlet augment the storm samples.

Lake Loading Trends: Results show a significant decrease (approximately 50 percent) in phosphorus loading since the early 1980's. This reduction was between the early 1980's and when current data gathering began in fall 1999. Data collected since 1999 show no trends.

Lacamas Lake Monitoring

The stormwater management program performed monthly monitoring in Lacamas Lake to track lake health over time, from year to year. Vertical profiles collect dissolved oxygen, temperature, pH, conductivity, and turbidity at 1-meter intervals. Secchi-disk readings are also recorded, and water samples collected from several depths for nutrient analyses.

Lake Monitoring Trends: Results showed a significant decrease in total phosphorus between 1984 and data collected since 1992. Since 1992, no trend is apparent. Lacamas Lake continues to be classified as eutrophic.

Storm Sewer Screening Program

Storm sewer screening also addresses requirements of S5.B.8.g. (illicit discharge abatement). The yearly screening was completed during summer months of 2001. Screening data was entered into the NPDES database and six sites were referred to education or enforcement staff.

The project focused on pipes and ditches carrying summer base flow and higher risk areas such as industrial and automotive oriented businesses. In 2001, the project visited

49 sites and collected water samples at 20 sites that had dry-weather flow. The following table summarizes water quality testing on the 20 sites where dry-weather flow was found.

Constituents present in dry weather discharges from sampled storm sewer outfalls

Parameter	Criteria for Inclusion in Tally	Percent of 38 Sampled Sites 2000	Percent of 20 Sampled Sites 2001
Temperature	>18 degrees C *	8	25
Turbidity	>5 NTU over background *	3	0
Copper	present	3	30
Zinc	present	No data	65
Total Chlorine	present	13	15
Ammonia	present	16	35
Fecal Coliform	MPN > 100 col/100 ml	32	No data
Enterococcus	MPN > 60 col/100 ml	No data	55
Odor	present	3	0
Clarity	other than clear	13	10
Floatables	present	3	0
Deposits/Stains	present	18	10
*indicates Washington Class A water quality standard			

Gibbons Creek bacteria Total Maximum Daily Load (TMDL) screening

Gibbons Creek watershed has a TMDL for fecal coliform bacteria. The unincorporated part of Gibbons Creek watershed is a rural area where roadside ditches are the only county storm sewers. During summer 2001, the stormwater management program made two separate screening trips to Gibbons Creek watershed to assess if the county road systems had dry weather bacteria sources. Every county road crossing was evaluated. One was found to have dry-weather flow and was sampled for enterococci bacteria on two separate occasions. Results showed a source of bacteria in the groundwater seeps below a barn. The site was referred to the Ecology TMDL coordinator.

Establish a set of indicator parameters

The stormwater management program established a preliminary set of biological, water quality and physical habitat indicator parameters and methods for collecting them. These form the basic tools for watershed monitoring at the beginning of the program. We expect to expand and refine these with time.

Monitoring Grants

The Clark County stormwater management program obtained a Centennial Clean Water Fund Grant and an EPA 319 Grant for collecting data to characterize Clark County watersheds and better support and coordinate local monitoring activities.

Long-term index sites

Public Works performed projects to implement the schedule drafted in July 2000. Field protocols were developed and implemented at ten long-term index sites. Results of the

first year's data collection provided information to characterize the sampled reaches. Subsequent annual reports will include discussion of any discernable trends.

Special projects in Lacamas Creek watershed

The stormwater management program and Lacamas Lake Restoration Grant conducted rapid stream characterization projects in Matney Creek and Dwyer Creek. This involved collecting macroinvertebrate samples using Ecology protocols and a visual habitat assessment using EPA methods at seven stream reaches.

A second project examined temperature and dissolved oxygen at ten stream sites as a "diurnal" monitoring project during a typical summer day. All sites exceeded the Class A stream 18° C standard by about one to two degrees.

Monitoring site inventory

Approximately 90 road crossings and public access points were field checked to assess them as possible monitoring points for county staff and volunteer groups. The site location was entered into a GIS layer and a related spreadsheet described accessibility and results of a visual inspection of the stream

ESA Program Basin Analysis Project

During late fall of 2001, the Clark County ESA Program began a project to characterize an "environmental baseline" for stream health in three major watersheds. The results of this project should be available later in 2002.

S5.B.5. Fiscal Analysis

Permit Requirement

A fiscal analysis, covering the term of the permit, of the capital, and operation and maintenance expenditures necessary to implement the stormwater management program, and a description of staff, equipment, and support capabilities to implement the stormwater management program. The fiscal analysis shall include a description of the source of funds that are available or are proposed to meet the necessary expenditures.

Summary of Compliance Activities

This is a requirement for submittal of the stormwater management program in the 1998 NPDES Part 2 application (revised in 1999). Each program element described in the SWMP and the Special Condition S9 included a description of the estimated annual budget for each current and proposed activity. Funding sources were specified for current activities. A new stormwater fee, later termed the Clean Water Fee was established to fund new activities.

The county uses financial tracking systems to account for NPDES revenue, staff hours by permit component, and costs by permit components for most new activities and many ongoing, pre-permit activities.

Ongoing pre-permit activity funding

The ongoing (pre-permit) activities are funded by development fees, general funds, grants, residual capital funds (from the former Burnt Bridge Creek Utility), and the Road Fund.

Clean Water Fund for Proposed (New) Activities

Clark County initiated a stormwater fee to pay for increased stormwater management under the permit (the permit condition S9 activities). The fee was approved in October 1999 and the first annual billing mailed on June 20, 2000. All revenue is placed in a special fund called the Clean Water Fund, to which only new NPDES activities are billed. All billings to this fund are coded by permit component.

The Clean Water Commission 2001 Annual Report lists the budget, revenue, expenditures and fund balance. Unspent revenue reverts to the stormwater capital program.

Total 2001 NPDES Clean Water Fund budget:	$4,328,288
Total 2001 stormwater fee revenue:	$4,539,725

S5.B.6. Data Maintenance

Permit Requirement

A mechanism for gathering, maintaining and using adequate information to conduct planning, priority setting, and program evaluation activities. The information and its form of retention shall include but not be limited to:

1. *Mapping of known municipal separate storm sewer outfalls;*
2. *Mapping of tributary conveyances, and the associated drainage areas of major municipal separate storm sewer outfalls;*
3. *Maps depicting existing land use;*
4. *A Map depicting zoning; and*
5. *A data base, including at least the following information: precipitation records; stormwater quality and quantity records; water quality and physical characteristics of receiving water that may be impacted by stormwater; and a description and location of major structural BMPs and other structural controls for stormwater discharges.*

Summary of Compliance Activities

Data are collected and maintained by several county departments and local and state agencies. Public Works maps storm sewer infrastructure and maintains storm sewer and several stormwater management GIS layers. The Department of Assessment and GIS maintains the balance of GIS information. The Public Works Department maintains most monitoring data.

Stormwater Infrastructure Mapping

The county worked to upgrade the system for maintaining computerized storm sewer system maps. The Public Works Department continued updating unincorporated urban areas of the countywide storm sewer database. A new system was created and implemented to perform GIS mapping of rural roadside ditches.

Record Drawings

The Department of Assessment and GIS reports a total of 3,327 subdivision plats. These are scanned and linked to internet-based maps. Also, a total of 792 site plans are scanned and linked.

Urban Storm Systems

The Urban Storm System mapping component consists of identifying and mapping storm sewer pipe systems located in urban (developed) areas. This includes survey sections within or adjacent to the Urban Growth Boundaries and other sections that have noticeable development. The mapping effort was divided into three phases: field mapping, data entry, and quality assurance/quality control (QA/QC). The field mapping occurred during the summer, fall and early winter of 2001. Data entry began during 2001 and will continue into 2002. The QA/QC phase will occur during 2002 and last until the system is completed.

Rural Roadside Ditches

The Rural System mapping component consists of identifying and mapping roadside ditches along county roads in rural (undeveloped) areas. The area was defined as survey sections not yet developed as urban areas. The mapping effort was also divided into three phases: field mapping, data entry, and QA/QC. The field mapping occurred during the summer, fall and early winter of 2001. Data entry began in 2001 and will continue into 2002. The QA/QC phase will occur during 2002 and last until the system is completed.

Stormwater Facilities

The Stormwater Facilities mapping component consists of identifying and mapping both public and private stormwater facilities. During 2001, work began on mapping the public facilities.

Private Facilities Inventory and Mapping

Approximately 124 private stormwater control facilities were inventoried for maintenance requirements of county stormwater control ordinances. Storm sewer maintenance and water quality source control inspectors added approximately 147 private storm systems to the private facility maintenance-tracking inventory linked to tax lots. Public Works obtained copies of industrial NPDES permit site plans for 62 facilities.

GIS Land Use Data

The Clark County Clark Count Department of Assessment and GIS has a library that includes land use descriptions, zoning classifications, basin boundaries, water bodies, basin boundaries, and other information useful for stormwater management. Some of this

information may be viewed through the county web site. Layers that were actively maintained by GIS or Public Works include:

- Parcel boundaries and attributes including land use and zoning
- Administrative boundaries
- Urban growth boundary
- Easements from quarter sections
- Subdivision boundaries
- Public and private roads
- Orthophotographic images of the entire county (July 2000)
- Stormwater Fee Parcels
- Stormwater lines and points
- Commercial, industrial, public facility and road impervious area measurement

GIS data at the GIS Department or Public Works that may or may not be periodically maintained:

- NPDES sample points
- Sanitary sewer lines
- Drainage basins
- Sub basin boundaries
- USGS topographic contours
- Localized 2 foot contours
- Land use
- Zoning
- DNR water features
- Conservation easements
- State and federally owned lands
- City/County Parks
- Aquifer units
- Comprehensive land use plan for GMA
- Flood Plains
- Gravel pits
- Wellhead protection areas
- Septic system parcels

Stormwater Fee Database

In 2000, Clark County created a countywide storm sewer fee database which includes every tax lot in unincorporated areas having assessed improvements valued at $10,000 or more. It also includes the square feet of impervious area for each non-residential lot (businesses, industries, public facilities, county roads, state highways, and government facilities).

Centralized Water Quality and Quantity Database

During the reporting period, Clark County continued to maintain databases for each monitoring project. Public Works established a centralized Microsoft Access database for recording and reporting storm sewer screening, private storm sewer maintenance inspections, and source control BMP implementation. Historic water quality and water resource reports are compiled into a set in Water Resources Section files. A data repository is established on Environmental Services' network computer where digital data is compiled. Work continued on planning a single database system for managing the program's environmental data.

S5.B.7. Watershed-wide Coordination

Permit Requirement

Consider opportunities for watershed-wide coordination mechanisms to address the following during the term of the permit:

1. *Development of coordinated stormwater management programs for shared water bodies;*
2. *Coordination of data management and mapping activities for compatibility; and*
3. *Coordination of monitoring and modeling activities to develop comparable data sets among permittees when estimating pollutant concentrations and loads, evaluating impacts, and addressing controls.*

Summary of Compliance Actions

Clark County endeavors to coordinate with local municipalities and agencies that play a role in water resource or stormwater management. Examples include:

- Periodic meetings with the City of Vancouver stormwater program;
- Updating a centralized/county-wide GIS system for maintaining and sharing all local storm drainage mapping (currently Clark County and the City of Camas use the system);
- Periodic meetings to share information with Puget Sound NPDES municipal stormwater permittees;
- Participation in the statewide stormwater policy committee;
- Partnering with Clark Public Utilities Water Utility to develop HSPF model for Salmon Creek watershed;
- Coordinating with Clark Public Utilities for Salmon Creek watershed data gathering;
- Partnering with the Lower Columbia Fish Recovery Board to develop a project for characterizing Clark County watersheds;
- Coordinating with the Clark County Conservation District for water resource education activities;
- Holding Clean Water Commission meetings to advise the Clark County Board of County Commissioners on stormwater issues;
- Operation of the county street waste decant facility which is shared with Vancouver and WSDOT, and available to other Clark County municipalities;

- A cooperative watershed stewards program with WSU;
- Coordinated planning with WSDOT for stormwater retrofit projects;
- Active participation in the Lower Columbia Fish Recovery Board;
- Active participation on the WRIA 27/28 planning unit;
- Coordination with Ecology TMDL programs in Salmon Creek and Gibbons Creek watersheds
- Participating in the Regional Coalition for Clean Rivers and Streams which includes the Lower Willamette Valley and Portland metropolitan area; and
- The county ESA coordinator is on the Board of Directors for Clark County Habitat Partners, a public-private organization promoting habitat preservation and restoration.

S5.B.8.a. New Development, Redevelopment and Construction Site Runoff

Permit Requirement

A program to control runoff from new development, redevelopment and construction sites that discharge to the municipal separate storm sewers owned or operated by the permittee. The program must include: ordinances, minimum requirements and best management practices (BMPs) equivalent to those found in Volumes I-IV of Ecology's Stormwater Management Manual for the Puget Sound Basin (1992 edition and as amended by its replacement), permits, inspections, and enforcement capability. The program must also include a process to make available copies of the "Notice of Intent for Construction Activity" and/or copies of the "Notice of Intent for Industrial Activity" to representatives of proposed new development and redevelopment.

Summary of Compliance Activities

Clark County Department of Community Development implements the following development regulations to control stormwater's adverse influence on streams, wetlands, lakes, groundwater, and wildlife habitat:

- Stormwater and Erosion Control Ordinance;
- Wetlands Protection Ordinance;
- Habitat Preservation Ordinance; and
- Critical Aquifer Recharge Areas Ordinance.

Clark County Public Works Department issues and enforces permits for utility construction in county right-of-way. These projects are also subject to the Stormwater and Erosion Control Ordinance.

Equivalence to the Stormwater Management Manual for the Puget Sound Basin (Washington Department of Ecology, Feb. 1992)

The county stormwater and erosion control code was revised for equivalence to the state manual and adopted by the Clark County Board of County Commissioners in July 2000. In April 2001, Ecology formally acknowledged that Clark County code meets the permit equivalency requirement.

Erosion Control Certification

Beginning January 1, 2001, County code requires all development contractors to trained in erosion and sediment control by an organization recognized by the Community Development Department Director.

Regulatory Program Compliance Measures

Stormwater and erosion control engineering design plans are only approved after detailed engineering review for conformance to stormwater code. Building permits are not issued until the subdivision stormwater system is complete. The low number of Development Services project inspections that noted erosion control certifications is because this was checked before the projects begin and not often noted in the field inspections.

2001 Stormwater and Erosion Control Engineering Plan Review

Plans Submitted	Number with Stormwater Features	Plans Approved	Stormwater Features in Compliance
114	64	70	64

2001 Development Services Inspections

Reporting Item	Totals
# of active construction projects	368
# projects with initial inspection for buffer stakes and sediment control	19
# projects with monthly erosion control log	95
# erosion control inspections	1256
# projects with erosion control certification (became effective Jan. 2001)	53
# stop work orders for erosion control violations	3
# citations for erosion control violations	6
# stormwater control inspections	1420
# stop work orders for storm control violations	3
# citations for storm control violations	0
# construction acceptances	101
# maintenance warranty inspections	299
# projects receiving maintenance warranty inspection at 22 months (for county ownership)	53
percent projects receiving maintenance warranty inspection at 22 months (for county ownership)	100 percent
# warranty inspections where notice of deficiencies sent out	22
percent warranty inspections where notice of deficiencies sent out	42 percent
# final warranty release	53

2001 Building Division Erosion Control Compliance Measures

MONTH	BUILDING INSPECTORS	INSPECTIONS	CORRECTION ORDERS	STOP WORK ORDERS	CITATIONS
January	10	755	59	0	0
February	10	804	49	0	0
March	10	978	133	1	0
April	10	931	59	0	0
May	10	1027	92	5	0
June	10	856	55	0	0
July	10	930	59	1	0
August	10	1,026	126	4	0
September	10	1,146	271	1	0
October	10	1,372	115	9	0
November	10	1,215	107	3	0
December	10	1,238	138	9	0
	Totals	**12,278**	**1,263**	**33**	**0**

Public Works Utility Permit Inspections

All public utilities permit work in right-of-way is required to have a utilities permit and follow the design specifications. During 2001, at least 963 utility permit applications were filed. These projects are also are subject to erosion control requirements of Chapter 13.29 CCC, Stormwater and Erosion Control. Enforcement tracking began in March 2001. Generally, statistics for the recording period suggest each permitted activity received an average of about three inspections. Erosion control stop work orders were not tracked separately from other more common violations. Generally there are few stop work orders because education actions solved the problem.

Utility Inspection Compliance Measures

Month	Permits Issued	Inspections	EC Education Actions
January	?	?	?
February	?	?	?
March	78	223	8
April	91	246	11
May	119	327	6
June	120	306	5
July	56	276	6
August	136	289	8
September	120	235	12
October	123	256	17
November	120	231	15
December		209	15
Totals	**963**	**2598**	**103**

Public Works Road Program Plan Review

All Public Works Department project design plans are submitted to Community Development for review and approval. The process is identical to private projects.

Public Works Road Program Construction Compliance

County road project contractors are required to conform to local and state codes and laws by contract. This includes construction of stormwater facilities and erosion control measures. A staff person is dedicated to each project from the engineering and design to construction. A Public Works' site inspector visits the site early in the process to identify potential problems long before they become issues and to recommend field changes in the construction process. Our inspector also audits the SWPPP and the ESC logs required by the contract.

The standard contract includes individual bid items for erosion and sediment control and stormwater pollution prevention. There are charges to individual water quality items, such as a construction entrance and wash rack, or an erosion control blanket. Specifications also include job requirements of Stormwater Pollution Prevention Plans, certified Erosion and Sediment Control Lead Person, and daily logs.

2001 Code Enforcement Division Compliance Measures

Code Enforcement Division enforces building, development, and environmental regulations. Two Code Enforcement Officers work full time on erosion control, the Water Quality Ordinance and related environmental regulations.

2001 Code Enforcement Division Compliance Measures

Type of Inspection	**Grading**	**Erosion**	**Water Quality**	**Surface Water**	**Habitat**	**Other**	**TOTAL**
Complaints	102	1,108	22	34	111	16	1393
Subdivision Monitor	0	1,481	0	0	0	0	1,481
Educational	34	250	5	7	36	2	334
TOTAL	**136**	**2,839**	**27**	**41**	**147**	**18**	**3,208**
Total lst Qtr 2001	25	504	5	5	32	3	574
Total 2nd Qtr 2001	46	714	13	11	55	5	844
Total 3rd Qtr 2001	36	828	4	14	34	3	919
Total 4th Qtr 2001	29	793	5	11	26	7	871
TOTAL	**136**	**2,839**	**27**	**41**	**147**	**18**	**3,208**

2001 Code Enforcement Resolutions

Type of Resolution	Grading	Erosion	Water Quality	Surface Water	Habitat	Other	TOTAL
Notice/Letter/Contact	287	1,481	23	83	190	28	2092
Citation/Stop Work	21	56	2	0	4	3	86
Appeals	3	3	0	0	0	0	6
Referrals	0	0	3	0	0	0	3
No Violation	45	741	7	10	27	12	842
TOTAL	**356**	**2,281**	**35**	**93**	**221**	**43**	**3,029**
Total 1st Qtr 2001	59	523	10	25	52	6	675
Total 2nd Qtr 2001	109	674	19	19	79	19	919
Total 3rd Qtr 2001	85	678	5	22	56	3	849
Total 4th Qtr 2001	103	406	1	27	34	15	586
TOTAL	**356**	**2,281**	**35**	**93**	**221**	**43**	**3,029**

Notice of Intent forms

Notice of Intent forms for NPDES industrial construction permits are available, along with development applications, at the Community Development customer service counter. The Stormwater and Erosion Control Ordinance requires projects to have all governmental permits as a part of a Final Stormwater Plan.

Regulatory Program Monitoring

Community Development implemented a set of criteria to monitor implementation of the Stormwater and Erosion Control Ordinance. These are included as reporting items in this permit component. The ESA program is beginning a program to assess the influence county regulations have on salmon habitat.

S5.B.8.b. Control of Runoff from Existing Residential and Commercial Development (includes retrofitting)

Permit Requirement

Appropriate treatment and source control measures to reduce pollutants in runoff from existing commercial and residential areas that discharge to municipal separate storm sewers owned or operated by the permittee.

Summary of Compliance Activities

Ecology further defines this requirement as a stormwater capital program to plan and build stormwater facilities to retrofit existing development. The county had a minimal program to build facilities. The largest retrofits were built as a part of county road construction projects. The Lacamas Lake Restoration Grant performed a pilot project to assess or characterize the Lacamas Creek watershed as a preliminary step in stormwater basin planning for that basin.

Ongoing Burnt Bridge Creek Watershed Projects

With adoption of the countywide stormwater fee, the Burnt Bridge Creek stormwater utility was dissolved and remaining capital funds were transferred into the new

countywide capital fund. The stormwater management program is undertaking the Thomas Lake project to utilize remaining Burnt Bridge Creek capital reserves. The Thomas Lake Project to restore wetlands and provide stormwater treatment continued through permit review and design.

Road project retrofits

Often, road improvement projects add stormwater controls for existing upstream impervious areas lacking treatment and retention/detention facilities at current standards. This is a new practice and projects are largely in design and permitting phases. The following is a summary and cost estimate of road projects that include stormwater controls for areas draining into the project. The expenditures are estimates because projects did not separate all of the retrofit costs. The original stormwater management program did not include or anticipate this type of stormwater capital project.

Road Program Stormwater Retrofits

Project	**New Impervious**	**Retrofit Impervious**	**Total Impervious**	**Retrofit**	**Retrofit**	**Retrofit R-O-W**	**Total Retrofit**
	Area Treated (ac.)	Area Treated (ac.)	Area Treated (ac.)	Design Cost	Construction cost	Purchase Cost	Cost
St. Johns Road/72nd Ave	14.2	13.1	27.3	$31,012	$0	$164,585	$195,597
NW117/119th St	4.4	6	10.4	$7,518	$0	$77,333	$84,851
NE 117th / 119th Street	5.8	9.5	15.3	$1,810	$0	$0	$1,810
Ward Road / NE 172nd Avenue	2.1	5.7	7.8	$3,729	$0	$0	$3,729
NE Covington Road/Fourth Plain	10.1	2.3	12.4	$0	$91,315	$0	$91,315
NE 134th Street	2.7	4.5	7.2	$14,873	$0	$0	$14,873
NE 25th Avenue	9.8	4.1	13.9	$5,285	$0	$10,208	$15,493
Padden Parkway	16.5	1.5	24.82	$0	$28,765	$0	$28,765
Ward Road	2.6	5.5	8.1	$0	$18,223	$0	$18,223
NE Covington Road(NE 102nd to 76th)	2.6	10.3	12.9	$3,229	$0	$0	$3,229
NE 76th Street	0.7	2.4	3.1	$4,663	$0	$51,097	$55,760
NE 162nd Avenue	8.6	11.6	20.2	$66,363	$0	$9,366	$75,729
Total Cost							$589,374

Costs are equal to that portion of stormwater management spent to treat existing impervious area.
Current Clark County code requires treating 100 percent of the impervious area.

Lacamas Creek Watershed Assessment Pilot Project

During 2001, the Lacamas Lake Restoration Grant Program performed an overall assessment of watershed characteristics and a detailed analysis on two typical subwatersheds. The main purpose of the project was to provide a basis for watershed management activities such as streamside tree planting after the grant expired. Three PowerPoint presentations summarize and communicate the major factors affecting the watershed and potential solutions. The Lacamas Watershed Characterization provides context for watershed issues and previous Lacamas Lake Restoration efforts.

S5.B.8.c. Operation and Maintenance of Municipal Storm Sewers

Permit Requirement

Operation and maintenance programs for new and existing stormwater facilities owned or operated by the permittee, and an ordinance requiring and establishing responsibility for operation and maintenance of other stormwater facilities that discharge into

municipal separate storm sewers owned or operated by the permittee. The programs shall include a strategy for addressing the disposal of street waste, decant, and cooperative efforts with Ecology and other entities to develop decant solutions.

Summary of Compliance Activities

Public Works' Operations Division maintains all county-owned storm sewers and roadside ditches. The owner maintains private storm sewer systems. Standards and practices for maintaining public and private storm sewer system maintenance are specified in the Stormwater Facility Maintenance Manual adopted by reference under Chapter 13.26A CCC. The county owns and operates a decant facility which also serves other governments' maintenance programs.

County Storm Sewer Maintenance

During 2001, Clark County operated and maintained storm sewers according to schedules and standards established for the approved NPDES stormwater management program. Catch basin cleaning failed to meet the 100 percent target due to equipment failure and construction at the decant facility.

The Stormwater Facility Maintenance Manual includes source control, erosion control, and vegetation management standards and practices which apply to all private and public stormwater facilities. The Water Quality BMP Manual for Operation and Maintenance of Publicly Owned Property includes source control, erosion control, and vegetation management standards and practices for activities that maintain roads, stormwater facilities, public facilities, and park lands.

2001 Stormwater Facility Maintenance Compliance Measures

Facility/Activity	NPDES-Required Activity	Performance Measures	Number of Activity
Catch basins	inspect 1x/yr clean following maintenance standards	# catch basins owned by CC # catch basins inspected # catch basins cleaned ercent catch basins cleaned	Approx. 6700 all inspected 6070 cleaned 91 percent cleaned
Manholes	inspect 1 x/yr clean following maintenance standards	# manholes owned # manholes inspected # manholes cleaned percent cleaned	Approx. 2400 all inspected 23 cleaned 1 percent
Drywells	inspect /clean every 3-5 years	# drywells owned # drywells inspected # drywells cleaned percent cleaned	Approx. 900 all inspected 139 15 percent
Detention/Retention facilities	mow 3 or 4 x/yr or maintain vegetation as natural	# R/D facilities owned # mowings # other maintenance done percent compliance	123 467 all weeded 100 percent
Biofiltration Swales	mow 3 or 4 x/yr other activities as per manual	# swales owned # times swales mowed description of other activity percent compliance	258 4 times cleaned/weeded 100 percent
Spill Response-stormwater facilities	Procedures in place	# of kits in vehicles # of vehicles percent of vehicles w/spill kits # of spills reported to Ecology	151 168 90 percent 4
Storm Sewer Pipe	inspect/maintain as necessary	# feet cleaned	7,175
Maintenance Tracking	Use computer based system to track activities	Activity Tracking Database still in use; timeline for comprehensive new system set back to early 2002	

Maintenance Tracking System

The county currently uses a Microsoft Access® database to track maintenance activities for the permit. Clark County continued a project to develop and implement a comprehensive maintenance-management system for road and drainage system O and M.

Private Stormwater Systems Inspection

Environmental Services developed a list of business and public facilities that have on-site stormwater facilities and a database to track both stormwater and source control BMP inspections. Public Works has an inspector who has the job of checking private storm sewer compliance with maintenance standards.

Public Works stormwater education staff inspects sites that are more likely to require source controls. Most of the businesses and apartments had minor source control problems such as uncovered dumpsters or other housekeeping lapses. In addition, about 40 residential source control complaints were responded to.

2001 Compliance Measures for Private Storm Sewer Maintenance and Source Controls

Number	Reporting Item
247	Private stormwater systems had **maintenance** inspections
213	Private stormwater systems meeting **maintenance** requirements
34	Private stormwater systems not meeting **maintenance** requirements
21	Private stormwater systems referred/provided **maintenance** info/education
153	Private stormwater systems had **source control** inspections
9	Private stormwater systems meeting **source control** requirements
144	Private stormwater systems not meeting **source control** requirements
153	Private stormwater systems referred/provided **source control** info/education
1	Private stormwater systems referred to Code Enforcement for **source control**

Decant Facility Operation

Clark County operates a storm sewer sludge decant facility. Liquids are treated and discharged to small, clay-lined retention areas, which can be emptied to the sanitary sewer. Solids are managed and disposed of, or reclaimed under a solid-waste handling permit issued by the Southwest Washington Health District. The City of Vancouver and WSDOT also use the facility. Other Clark County municipalities have the option of contracting to use the facility.

During 2001, the site was roofed with a 120-foot by 140-foot canopy, partially funded by a Centennial Clean Water Fund grant. The canopy prevents rainwater from mixing with decant fluids and reduces the volumes discharged to the retention ponds.

S5.B.8.d. Operation and Maintenance of Roads and Highways

Permit Requirement

Practices for operating and maintaining public streets, roads and highways, including rest areas, to reduce stormwater runoff impacts.

Summary of Compliance Activities

Clark County maintained roads and streets according to schedules and standards established for the approved NPDES stormwater management program. Public Works' Operations and Parks Maintenance follow standards and practices in the Water Quality BMPs for Operation and Maintenance of Publicly Owned Property manual. The manual was adopted as policy in July 2000 for the use of pesticides and fertilizer on county lands.

2001 Compliance Measures for Road and Street Maintenance

Facility/Activity	NPDES-Required Activity	Performance Measures	# Activities Completed
Sweeping Streets	residential 9 x/yr.; arterial 12 x/yr.	# arterial sweeper sections # neighborhood sweeper sections # times each arterial section swept # times each neighborhood section swept percent compliance	40 42 14 9 100 percent
Spill Response-stormwater facilities	Procedures in place	# of kits in vehicles # of vehicles percent of vehicles w/spill kits # of spills reported to Ecology	151 168 90 percent 0
Litter Removal	4 x/yr. on arterials, as needed	# times litter picked up on arterial roads	252
Roadside Ditches/Culverts	Preventative Maintenance on all	# ditches inspected # ditches cleaned # culverts inspected # culverts cleaned	all inspected 8 percent all inspected 8 percent

S5.B.8.e. Consideration of Water Quality in Flood Control Projects

Permit Requirement

A program to include water quality management considerations into flood management projects, including a schedule for retrofitting existing projects to the extent possible.

Summary of Compliance Activities

Clark County flood control projects are limited to small drainage maintenance and repair. The projects include stream-bank erosion control and water quality treatment where feasible. There were few drainage projects during the reporting period and none of a scale that made it feasible to add water quality retrofits.

S5.B.8.f. Reduction of Water Pollution from pesticides, herbicides and fertilizers

Permit Requirement

A program to reduce pollutants associated with the application of pesticides, herbicides, and fertilizer discharging into municipal separate storm sewers owned or operated by the permittee.

Summary of Compliance Activities

Solid Waste Program Hazardous Waste Drop Off Sites

Environmental Services Division, Solid Waste Program continued (non-education) projects to encourage proper disposal of hazardous waste including pesticides and fertilizers. The household hazardous waste and small generator waste collection and

disposal program is a primary tool for reducing the amount of pesticides and fertilizers in the environment.

Plan and Schedule for Minimizing WQ Impacts from Pesticides and Fertilizers

The Clark County Water Quality BMP Manual for Operation and Maintenance of Publicly Owned Property includes standards and practices for use of pesticides and fertilizers. It was adopted as county policy in July 2000 and is being implemented by Public Works. The manual is also followed by Vancouver/Clark Parks, which manages parks and open space owned or operated by Clark County.

The Stormwater Facility Maintenance Manual, adopted as code in July 2000, provides guidelines for vegetation management of public and private stormwater facilities. A stormwater facility inspector inspects private facilities and provides the public with maintenance information (see S5.B.8.c.).

Natural Lawn Care Program

The lawn care program is focused largely on education for children. A professionally designed puppet show was developed for presentation to elementary (kindergarten to third-grade) students. The show was presented 110 times and reached approximately 4,000 students with a message to use natural gardening methods.

Natural Landscaping for the Padden East Road Project

The Solid Waste Program continued work on a pilot project to reduce pesticide and fertilizer for landscape construction and maintenance of county road projects. The aim was to design landscape plantings for the Padden East Road Project that would need less pesticide and fertilizer than typical landscaping.

S5.B.8.g. Illicit Discharge, Improper Disposal, and Spill Abatement

Permit Requirement

A ongoing program to detect, remove and prevent illicit discharges and improper disposal, including spills, into the municipal separate storm sewers owned or operated by the permittee.

1. *Each permittee shall effectively prohibit illicit discharges to the municipal separate storm sewers owned or operated by the permittee other than those authorized under a separate NPDES permit. Unless identified by either the permittee or Ecology as significant sources of pollution to water of the state, the illicit discharges listed in 40 CFR 122.26(d)(2)(iv)(B)(1) need not be prohibited from entering the municipal separate storm sewers owned or operated by the permittee. As necessary, the permittee shall incorporate control measures in the stormwater management program to ensure these discharges are not significant sources of pollutants to waters of the state.*

2. *The program shall include ongoing field screening, using the methods required in 40 CFR 122.26(d)(1)(iv), or alternative methods that have been approved by Ecology. The field screening program shall focus on urbanized areas.*
3. *The program shall incorporate best management practices and procedures to prevent, contain, and respond to spills or improper disposal into the municipal separate storm drains owned or operated by the permittee.*

Summary of Compliance Activities

Clark County continues to enforce the Water Quality Ordinance adopted in November 1998. The storm sewer screening program annually inspected and tested water in storm sewers, focusing on high risk areas. Public Works has spill kits in many vehicles. Public works also works with businesses and the general public to collect and dispose/recycle oil, hazardous waste, and moderate waste.

Water Quality Ordinance

The Community Development Department's Code Enforcement Division and Public Works implement the Water Quality Ordinance. Code enforcement responds to complaints and uses both education and enforcement actions. Public Works compliance approach is to provide source control BMP information and education.

The reporting for source control and storm sewer maintenance is under component S5.B.8.c. Storm sewer O and M.

Storm Sewer Screening

Storm sewer screening is described as part of the monitoring program under condition S5.B.4.

Waste Collection and Disposal Programs

Public Works Environmental Services, Solid Waste Section operates several programs to collect and properly dispose of hazardous waste material. Clark County believes these programs reduce the amount of waste that is improperly disposed of to storm drains, the ground, or water bodies.

Mobile/Satellite Hazardous Waste Collection

	Jan. - Dec. 2001
Number of Sites	7
Number of participants	522
Amount of Household Hazardous Waste	51,668 Pounds

Motor Oil Recycling

	Jan. - Dec. 2001
Amount of used oil collected at household hazardous waste sites	27,697 gallons
Amount of used oil collected curbside	57,912 gallons
Amount of used oil collected at used oil collection sites	14,421 gallons

Moderate Risk Waste Collection Sites

	Jan. -Dec. 2001
Number of Sites	2
Number of participants	3,742
Amount of household hazardous waste collected at fixed sites	342,133 lbs.
Amount of latex paint collected for recycling	246,430 gallons
Amount of latex paint recycled	199,609 gallons

Spill response

Public Works follows practices described in the Water Quality BMPs for Operation and Maintenance of Publicly Owned Property manual. Public Works has limited capacity for responding to hazardous materials spills; however, spill response kits are provided for many Operations Division's vehicles. Awareness training is performed biennially. Three Operations staff members were trained by WSDOT to provide awareness and basic response training to other county employees.

Spill response is coordinated through the Clark Regional Emergency Services Agency and the Department of Ecology. Policy is in place for notification of the appropriate responder for abandoned materials. Spills other than small vehicle fluid spills are referred to the Department of Ecology through the 911 system.

2001 Spill Response Measures

Facility/Activity	**NPDES-Required Activity**	**Performance Measures**	**# Activities Completed**
Spill Response-	Procedures in place	# of kits in vehicles # of vehicles percent of vehicles w/spill kits # of spills reported to Ecology	151 168 90 percent 4

S5.B.8.h. Industrial Stormwater Pollution Reduction

Permit Requirement

A program to reduce pollutants in stormwater discharges from industrial facilities that discharge into municipal separate storm sewers owned or operated by the permittee, and ensure compliance with local ordinances. The program shall include, but not be limited to:

1. *Procedures to identify industrial facilities that discharge into the municipal separate storm sewers owned or operated by the permittee.*
2. *A field inspection program to assess compliance with local ordinances adopted in accordance with Special Condition S5.B.3; and*
3. *A program to monitor and control pollutants in stormwater discharges to municipal separate storm sewers owned and operated by the permittee, from industrial facilities that the permittee determines are contributing a substantial pollutant loading to municipal separate storm sewers. For industrial facilities which require coverage under Ecology's "Baseline General Permit for Stormwater Discharges Associated with Industrial Activity," this program shall be developed jointly with Ecology.*

Summary of Compliance Activities

There is relatively little industrial area in unincorporated Clark County. Industrial sites are generally scattered individual operations, small industrial areas, or gravel mining and processing facilities covered by state waste discharge permits. County actions are limited to those described here and actions described for private storm sewer inventory, inspection and maintenance requirements for Component S5.B.8.c. and Component S5.B.8.g.

Inventory

Environmental Services maintains an inventory of businesses subject to the Water Quality Ordinance using the stormwater fee billing database and Assessor's office records of parcel land use. The stormwater fee billing database identifies every non-residential parcel for stormwater facility maintenance and source control requirement tracking.

Field Inspection

The storm sewer maintenance and source control inspections described under S5.B.8.c. meet this requirement.

Industrial Stormwater Permit Compliance

Pollution problems for facilities covered by NPDES industrial stormwater permits are referred to the Department of Ecology for enforcement. Environmental Services informally coordinates compliance with the Ecology SW Region NPDES industrial stormwater permit inspector and Vancouver Field Office staff. Clark County made no industrial stormwater permit referrals Ecology during 2001.

Clark County has a screening program that made a dry weather check of storm sewers in industrial areas (S5.B.4.).

S5.B.8.i. Education to Reduce Stormwater Pollution

Permit Requirement

An education program aimed at residents, businesses, industries and employees of the permittee whose job functions may impact stormwater quality. An education program may be developed locally or regionally. The program shall include: Education on the proper use and disposal of pesticides, herbicides, and fertilizers; training of construction contractors and developers on developing stormwater site plans and BMPs for construction activities; efforts to explain the definition and impacts, and promote proper management and disposal of used oil and toxic materials.

Summary of Compliance Activities

The county Solid Waste Program, Clean Water Program and ESA Program perform numerous activities to promote pesticide and fertilizer reduction, proper waste disposal, and source BMPs through education. The Department of Community Development operates a certification program for erosion control contractors. ESA Program budget and expenses are not reported.

Waste Reduction and Environmental Information and Education

Environmental Services conducts the solid waste program that includes a program aimed at proper management and disposal of hazardous waste and reducing hazardous or toxic materials use. Several of these programs focus on promoting water resources protection and sound environmental practices by businesses. The County also supports and participates in regional programs such as the Environmental Information Cooperative and special events.

Build a Better Clark Partnership with Clark County Homebuilders Association

Action	**Jan. - Dec. 2001**
Information articles	12
On-site assistance visits	25

Small Quantity Generator Assistance Program

Action	**Jan. - Dec. 2001**
Number of business site visits	53

Household hazardous waste education materials were provided to approximately 2,300 households.

Stormwater Specific Information and Education

Environmental Services has one specialist working solely on stormwater technical assistance for businesses and homeowners and two Solid Waste Program staff who

provide broader technical assistance for toxic material and waste reduction. This activity is also reported as a private stormwater system maintenance and source control requirement under S5.B.8.c. In addition, about 40 residential source control complaints were responded to.

Action	Jan. – Dec. 2001
Number of businesses visited	153
Major newspaper advertisements on stormwater source controls	1

Pesticide Reduction Education/Mother Natures Garden Puppet Shows

Clark County has a traveling puppet show that brings fertilizer and pesticide reduction education to large numbers of elementary school students. In addition, approximately 1,500 booklets were distributed. This is also reported in Component S5.B.8.f.

Action	Number of presentations	Total Participants during Jan. - Dec. 2001
Mother Natures Presentations	110	4,000

Environmental Information Cooperative

Clark County is one of six partners that support the Environmental Information Cooperative. The Environmental Information Cooperative provides coordinated environmental education. The program developed a program to reach school children throughout Clark County. This includes the River Rangers presentations to primary school classes.

Environmental Information Cooperative Activity	Total Participants during Jan. - Dec. 2001
Class room groundwater presentations	19
Number of Children reached by groundwater presentations	570
River Ranger Presentations	31
Number of Children reached	730

Watershed Stewards Program

Clark County funds a position to implement the watershed stewards program at Washington State University Extension. The Watershed Stewards program trains volunteers in watershed and water quality protection. These volunteers, in turn, contribute back to the community by educating the public at community events and fairs, guiding students in tree plantings, and monitoring projects, plus a variety of other activities. The program, which is a partnership between Clark County and Washington State University Cooperative Extension, offers two 10-week training sessions during the year with 25 new Stewards trained in 2001. The program currently boasts 42 active volunteers who contributed close to 1,600 hours of volunteer time and provided outreach to 4,600 people in 2001.

PROGRAM	TOTAL PARTICIPANTS DURING Jan. – Dec. 2001
Number of Watershed Stewards training groups	2
Number of Watershed Stewards trained	25

Regional Coalition of Clean Rivers and Streams

Clark County actively participates in the Regional Coalition for Clean Rivers and Streams. In 2001, a regional campaign entitled "The River Starts Here" featuring a picture of a storm drain was promoted in the Portland Metropolitan and Clark County areas.

Advertisements

In June 2001, a series of four newspaper ads were run in local newspapers targeting car washing, paint disposal, automotive maintenance, and lawn care. The ads were run in one daily paper and two weekly papers with a total circulation of 962,239.

Septic System Maintenance Education

A publication about septic tanks and their maintenance was developed and distributed as a newspaper insert in the local paper. The total distribution was 63,939 copies.

Community Events

Outreach and education included several community events such as the Annual Home and Garden Fair (3 days), the Clark County Fair (10 days), and the Lacamas Watershed Festival (1 day).

Storm drain Stenciling

Clark County provides materials and stencils to volunteers for an on-going storm drain stenciling project. Coordination of this effort is now part of the Watershed Stewards program.

Publications

A packet of fact sheets outlining best management practices for homeowners was produced. The packet includes tips and do's and don'ts for protecting water quality related to landscaping, automotive repair, septic system maintenance, home maintenance, pets, etc. These fact sheets were distributed at the Clark County fair and other community events, as well as to other agencies for distribution. There was a print run of 5,000 packets.

Erosion Control Certification Training

Clark County requires certification for all contractors installing and maintaining erosion controls. This is accomplished through a locally operated training and certification program. The program is administered by the Building Industry of Southwest Washington. Clark County provides part of the training, including field techniques. Six-hundred-eleven contractors were trained and certified during 2001.

Status of Condition S9 Scheduled Actions

Special Condition S9 listed specific new activities with implementation schedules. This section lists the activities and their schedule status.

Requirement	*Schedule*	*Status*
S9.A.1. Stormwater equivalence to the Puget Sound Manual	Adopted by 7/31/00	In place 7/28/00
S9.A.2. Storm sewer maintenance ordinance	Adopted by 7/31/00	In place 7/28/00
S9.A.3. Add 1FTE code enforcement officer	In place 8/31/99,	In place 8/31/99
S9.A.3. Add 1FTE code enforcement officer if work load dictates	In place 2/28/00	In place 2/28/00
S9.A.4. Add 1 FTE erosion control inspector for Building	3/31/00	In place 3/31/00
S9.A.4. Add 1 FTE erosion control inspector for Dev. Serv.	3/31/00	In place 3/31/00
S9.A.5. Add 1 FTE stormwater facility for new development	7/31/00	In place 7/00
S9.A.6. Implement Water Quality Ordinance	System in by 7/31/00	Began 7/00
S9.B.1. Increase street sweeping to specified standards	Start 8/31/99	Began 8/99
S9.B.2. Increase swale maintenance to standards	Start 8/31/99	Began 8/99
S9.B.3. Implement inspection and maintenance program for R/D facilities	Start 3/31/00	Began 3/00
S9.B.4. Implement roadside ditch and culvert maintenance standards	Start 3/31/00	Began 3/00
S9.B.5. Add 1FTE for private facilities inspection	Start 7/31/00	In place 6/00
S9.B.6. Develop spill response program	In place 7/31/00	Began 6/00
S9.B.7. Perform storm pipe maintenance to standards	Start 3/31/00	Began 3/00
S9.B.8. Begin yearly catch basin inspection and cleaning	Start 8/31/99	Began 8/99
S9.B.9. Begin 5-year drywell cleaning cycle	Start 3/31/00	Began 3/00
S9.B.10. Establish computer-based maintenance tracking	In place 12/31/00	Simple system in Place 1/00; larger system under development
S9.B.11. Develop a program to map private storm sewers	In place 7/31/00	Field mapped most of system in 2001
S9.C.1. Establish a centralized SWMP database	In place 12/31/00	Work began 7/00
S9.C.2. Establish GIS storm sewer maintenance program	In place 12/31/00	In place 12/00
S9.C.3. Regulatory program monitoring project	In place 7/31/00	Ordinance tracking in place 7/00
S9.C.4. Establish storm sewer screening	In place 7/31/00	In place 7/00
S9.C.5. Watershed Characterization program schedule	Drafted by 7/31/00	Started projects in summer 2001
S9.D.1. Permit funding Strategy	Ordinance by 9/31/00	Completed 10/99
S9.D.2. Lawn campaign	In place 12/31/99	In place 12/99
S9.D.3. Add 2 FTE for stormwater specific education	In place 7/31/00	Completed 4/00
S9.D.4. Add 1 FTE for watershed steward program	In place 7/31/00	In place 11/99
S9.D.5. Add ½ FTE for river ranger program	In place 3/31/00	In place 8/99
S9.D.6. County policy on pesticide and fertilizers	In place 7/31/00	In place 7/00
S9.E.1. Establish capital improvement program	Begin by 8/31/00	Projects began design in 2001

2. NOTIFICATION OF CHANGE IN PERMIT AREA

A total area of approximately 115 acres was removed from unincorporated Clark County by five separate annexations. In all, about 1,000 linear feet of county road was transferred into the City of Washougal and about 300 feet into the City of Vancouver.

3. DIFFERENCES BETWEEN PLANNED AND ACTUAL EXPENDITURES BY COMPONENT.

The permit asks for a description of:

Differences between planned and actual expenditures with a breakdown for the components of the SWMP and the budget since permit issuance. The report shall reflect numeric expenditures for the components of the SWMP.

This report includes two tables showing:

- Estimated budget and expenditures for 2001 by Program Element and
- Yearly expenditures by Permit Component.

It is not possible to track every dollar expended on NPDES permit compliance because no systems were in place to separately track some pre-permit stormwater activities. The stormwater program includes both ongoing activities in place before the 1999 permit, and new activities to meet permit requirements after 1999.

Ongoing pre-permit activities had a recognized revenue source in 1999. New activities had no established revenue source until October 1999, when the Board of Clark County Commissioners adopted a stormwater fee and established the Clean Water Fund. Ongoing pre-permit activities are often difficult to separate from non-stormwater activities because that was not an issue when expense tracking was originally set up. New activities billed to the Clean Water Fund have work orders tagged to individual permit components.

Estimated Budget and Expenditures by Program Element

The estimated 2001 budget includes ongoing pre-permit activities and new permit-required activities billed to the new Clean Water Fund. The *estimated* budget for pre-permit activities and the actual budget for new activities are combined to estimate the total planned expenditures for each program element and program administration. The Regulatory Program, O and M, Monitoring, Public Involvement and Education, and Capital Program are all the sum of estimated NPDES-required activities from year-1 baseline in the Stormwater Management Program (April 1999) and County Clean Water Fund budget. Administration is from the Clean Water Fund budget. Program administration includes program costs such as manager's time, building rental for the stormwater section, the annual permit fee, permit program development, and stormwater fee collection.

Expenditures for O and M; Monitoring and Evaluation; Public Involvement and Education; and Administration are from the county accounting system and project

billings. The Regulatory Program and Capital Program include estimates for expenditures on projects and activities not tracked separately for the NPDES permit. The Clean Water Fund had a capital reserve balance of $2,436,249 at the end of 2001. The capital reserve is accumulated stormwater fees not spent on program activities.

Estimated SWMP Budget and Expenditures by Program Element

SWMP Program Element	***Est. 2000 Budget***	***Est. 2000 Expend.***	***Est. 2001 Budget***	***Est. 2001 Expend.***
Regulatory Program	$ 1,813,542	$ 1,621,799	$ 1,454,242	$2,016,242
Operation and Maintenance	1,895,997	2,085,268	2,325,858	2,250,005
Monitoring and Evaluation	434,180	204,874	595,883	428,763
Public Involvement and Education	1,050,327	776,589	923,124	1,058,034
Capital Improvements	670,610	2,240412	303,618	792,948
Program Administration/coord.	643,695	860,983	382,402	386,375
Totals	**$7,189,004**	**$7,789,925**	**$5,987,128**	**$6,934,368**
Accumulated Stormwater Capital Reserve		1,671,000		2,436,249

Estimated Annual Expenditures by Permit Program Component

Stormwater program components are defined by the permit as specific requirements to develop and implement the stormwater management program. Components S5.B.2., S5.B.3., and S5.B.5. had no expenses during 2000 because they relate to developing the stormwater management program for the permit application completed in 1999. Other components had little or no expenses because the activities are conducted as parts of other components. For example, testing and screening for non-stormwater discharges from industrial facilities under component S5.B.8.h. is actually included in the monitoring program (S5.B.4.). Condition S9 components are included in the broader S5.B. components.

Estimated Yearly Expenditures by Permit Component

Component	*Aug. to Dec. 1999*	*2000*	*2001*
Regulatory Program			
S5.B.8.a. New Development, Redevelopment and Construction Site Runoff	450,140	1,621,799	2,016,242
Operations and Maintenance			
S5.B.8.c. Operation and Maintenance of Municipal Storm Sewers	675,052	1,295,186	1,464,892
S5.B.8.d. Operation and Maintenance of Roads and Highways	312,621	790,082	785,113
Monitoring and Evaluation			
S5.B.4. Monitoring Program	58,306	102,926	174,527
S5.B.6. Storm Sewer Mapping and Data Maintenance	0	101,948	254,236
Public Involvement and Education			
S5.B.7. Watershed-wide Coordination	0	160	3,599
S5.B.8.f. Reduction of water pollution from pesticides, herbicides and fertilizers	0	162	26,146
S5.B.8.g. Illicit Discharge, Improper Disposal, and Spill Abatement	166,573	286,658	319,184
S5.B.8.h. Industrial Stormwater Pollution Reduction	0	0	0
S5.B.8.i. Public Education	211,019	489,609	709,105
Capital Improvements			
S5.B.8.b. Control of Runoff from Existing Residential and Commercial Development (includes retrofitting)	21,113	2,237,646	785,804
S5.B.8.e. Consideration of Water Quality in Flood Control Projects	0	2,766	7,144
Administration			
Program Administration/Coordination/Overhead (no component)	156,227	836,578	334,366
S5.B.1. Comprehensive Planning Process	8,787	24,405	52,009
S5.B.2. Management Needs and Priorities	0	0	0
S5.B.3. Legal Authority	0	0	0
S5.B.5. Fiscal Analysis	0	0	0
Total	**$2,061,837**	**$7,789,925**	**$6,932,367**

Discussion of Planned and Actual Expenditures

Ongoing pre-permit activities continue at about pre-permit levels. Costs for operation and maintenance of stormwater facilities and roads can vary by season and from year-to-year depending on weather. For example, extremely wet weather can greatly increase costs for emergency actions and repairs, while dry weather decreases costs. Several pre-permit activities and early permit projects such as stormwater ordinance revisions were completed. This lead to slightly lower budget estimates in 2001. Also, the Capital Budget includes only the current stormwater projects.

The stormwater capital improvements were higher than estimated for the permit application because the Road Program began retrofitting existing drainage during many of its road construction projects. Retrofitted areas are on existing roads or streets, lacking stormwater treatment or flow controls meeting current standards that drain through new road projects. Road project retrofits were lower in 2001 due to a change in the size and type of projects.

Administration costs decreased in 2001 after completing work to set up a new program and the billing system for the Clean Water Fee.

4. REVISIONS TO THE SWMP FISCAL ANALYSIS

The SWMP included financial analysis for a five-year program. Ecology wrote a permit to cover the period of August 1999 to December 31, 2000 (subsequently extended until a replacement is issued). The permit included some activities of the five-year SWMP but not all of it. A new SWMP, including the five-year fiscal analysis will be drafted following issuance of the Western Washington phase one municipal NPDES permit (expected in 2003 or later)

Until a new permit is effective, the program will likely continue indefinitely under the estimated 2000 SWMP budget based on the September 1998 permit application. The county will probably increase the amount spent on monitoring, storm sewer mapping, public involvement and education, and capital improvement projects during 2002 as these parts of the program continue to develop.

5. SUMMARY AND ANALYSIS OF THE CUMULATIVE MONITORING DATA COLLECTED THROUGHOUT THE TERM OF THE PERMIT

All monitoring activities are described under Status of Permit Component S5.B.4.

6. SUMMARY OF COMPLIANCE ACTIVITIES

These are described in the description of each permit component.

7. IDENTIFICATION OF KNOWN WATER QUALITY IMPROVEMENTS OR DEGRADATION

Lacamas Lake Restoration Program

Water quality monitoring in Lacamas Lake Basin is adequate to show some long-term trends. Annual total phosphorus and suspended sediment loads to Lacamas Lake appear to be significantly lower now compared to the loading estimate at the beginning of the program in 1983-1984. The 1983-1984 estimates are the only previous loading calculations.

Lacamas Lake Loading Estimates

Year	Discharge	Total P Load	TSS Load
12/1983-11/1984	128,000 acre ft	14,400 kg	1,800,000 kg
10/1998-9/1999	128,000 acre ft	7,560 kg	812,000 kg
10/1999-9/2000	96,300 acre ft	6,410 kg	1,240,000 kg
10/2000-9/2001	48,800 acre ft	3,060 kg	719,000 kg

During the reporting period, Lacamas Lake continued to show eutrophication symptoms, including summer hypolimnetic dissolved oxygen depletion and high levels of algae growth. Long-term trend analyses (Seasonal Kendall test) indicate a significant (95 percent confidence level) but slight downward trend in total phosphorus in the surface waters since 1983. Between 1983 and 1999, average (arithmetic mean) surface water total phosphorus concentration decreased from 0.070 mg/L to 0.033 mg/L. However, trend analyses from 1991 to 2001 indicate no significant change in surface water total phosphorus concentration during the past decade.

8. WATERSHED-WIDE COORDINATION AND ACTIVITIES

This information is provided under Status of Permit Component S5.B.7. Watershed-Wide Coordination and S5.B.1. Planning.